AEM DATA SHEET

Please read the policies and procedures for the use of the **AEM** and complete requirements for <u>one</u> or <u>two</u> specific experiments <u>only</u>. Answer all questions.

Project Duration _____**Support** for HVEM/ARM_____Short term (<3 mos.)_____Long term (>3 mos.)

Material

What is the material_____ Approx. chemical composition_____

_____Thin foil _____Bulk _____Crystalline _____Amorphous
_____Ceramic _____Powder _____Metallic _____Semiconductor cross-sections
_____Polymer _____Biological _____Interfaces _____Other _____Unknown

Preparation

_____Ion-mill _____Electrochemical polishing _____Microtome
_____Powder dispersion _____Extraction replicas substrate _____Other

Nature of Specimen

_____Self-supporting _____3 mm grid _____Be (use for low z microanalysis)
_____Grid supported _____Cu (do not use if sample contains Cu)
_____Carbon Film _____M_o (use for hot stage above 800^{o}C
_____Holey Carbon Film
_____Glued to grid _____Epoxy _____Ag paint ____Other
_____Substrate for particle suspension other than carbon
_____Carbon-coated _____Other coatings
_____Beam-sensitive _____Radioactive _____Toxic
_____Microtomed specimen on what grid material?_____

Morphology

_____Precipitates _____Interfaces & grain boundaries _____Bulk _____Other

Experiment to be performed

_____EDXS ___UTW (Z>6) ____HAD (Z>11)
_____Chemical microanalysis: _____Quantitative _____Qualitative
_____Bulk (>1wt%) _____Trace element (<1wt%)
_____Standardless _____With standard
_____Chemical mapping _____Channelling enhanced microanalysis _____Other (specify)
_____EELS
_____Chemical microanalysis:
_____Quantitative _____Qualitative _____Thickness measurement
_____EXELFS ____ELNES _____Other (specify)
_____Diffraction _____CBED _____Rocking beam _____SAD _____uu diff
_____Imaging
_____Digital image acquisition _____Other
____Computer
_____EDXS data processing _____Image processing
_____EELS data processing _____Other
_____Hot Stage (<13OOC) with
_____EDXS _____EELS _____Diffraction _____Video (provide VHS120 tape)
(Please provide copies of all phase diagrams of subject material & Ta along with your target temperature included with this request)
_____Development
_____Software _____Hardware _____Other (specify)

Background (Please rate your level of competence on a scale: 1 = fully conversant; 5 = beginner)

_____2OOCX operation _____STEM operation _____Diffraction technique
_____EDXS operation _____EELS operation _____KEVEX 8000 routine operation
_____EDXS data processing _____EELS data processing _____Computing
_____KEVEX advanced imaging software

Check resources needed:

1) Is the microscopist comfortable in analytical electron microscopy? ☐ Yes ☐ No
2) Is the microscopist to be trained to operate the AEM? ☐ Yes ☐ No
3) Will you need the NCEM to provide an operator to run the AEM for you? ☐ Yes ☐ No
4) What electron microscopy classes has the microscopist on this proposal completed?

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